Spring 1998

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NSU Oceanographic Center

Nova Southeastern University
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Currents

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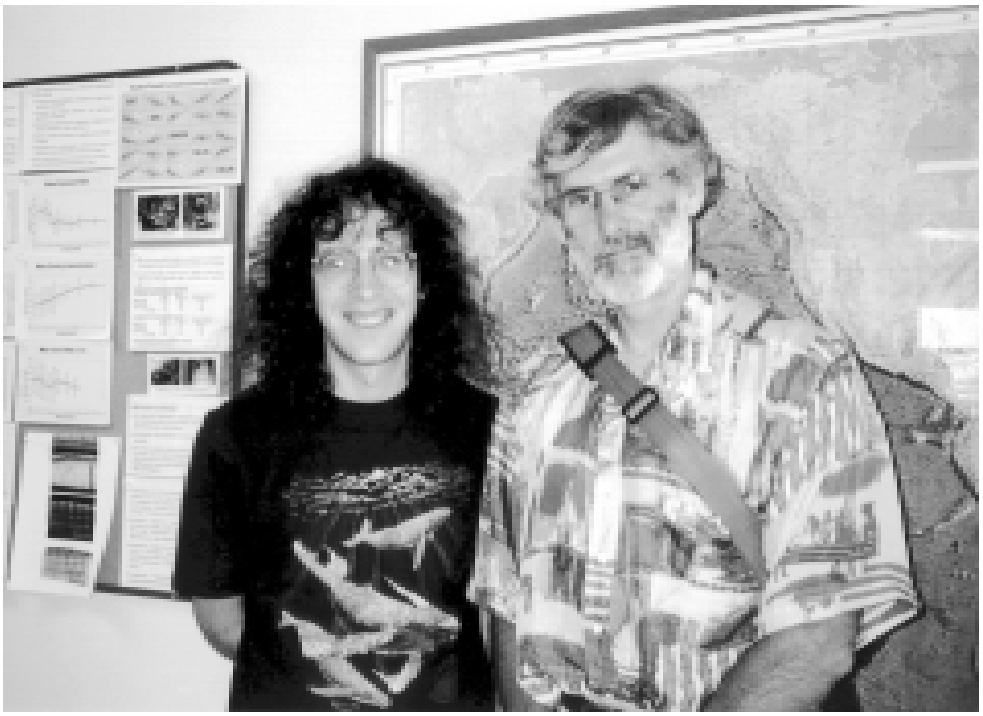
A Joint Modeling Study of El Niño Is Under Way

Drs. Barry Klinger and **Julian McCreary**, of the OC, and **Richard Kleeman**, of Lamont-Doherty Earth Observatory, Palisades, NY, are busy working on a very hot topic these days. They are modeling decadal variations of El Niño. The project is being sponsored by the National Oceanic and Atmospheric Administration (NOAA).

According to Klinger, the motivation for their work is the fact that roughly every 3 to 7 years there is an El Niño, but there seems to be a longer scale. "Over 10 years you might get a series of strong ones, then for the next 10 years you might get weak ones. We have a theory that might explain why."

His theory goes back to some early work with McCreary and **Peng Lu**, which "connects what the ocean is doing outside the tropics with what is happening at the equator. When an El Niño occurs," Klinger explains, "it basically gets rid of a region of relatively cold water in the eastern equatorial Pacific. Why is there cold water at the equator in the first place? The reason is that cold water is upwelling from below. But why is there cold water below the surface? That's because water sinks at mid-latitudes where it's colder, and flows to the equator several hundred meters below the surface. McCreary and Lu showed that the amount of water that flows along this path just depends on how strongly the trade winds are blowing at the edge of the tropics, say 20°N to 20°S."

Klinger states that other researchers have shown that you can get oscillations in the strength of the mid-latitude winds. "These oscillations have a period of around 10 years. So our idea is that this mid-latitude oscillation changes the amount of cold water coming to the equator, and thus influences El Niño. We have gotten together with Dr. Richard Kleeman to produce a coupled ocean-atmosphere model to simulate this process.



Drs. Barry Klinger and Julian McCreary.

"When we run the coupled model," Klinger continues, "it spontaneously produces El Niños, as well as roughly 10-year oscillations, which affect both the mid-latitudes and the equatorial regions. For example, a common measure of the strength of an El Niño is the sea surface temperature (SST) along the equator. Basically, we can see the El Niños and see the changes in their strength due to this decadal cycle. We are still analyzing our results, but there is a clear connection between the winds at the edge of the tropics and the equatorial SST, as we predicted."

The current research focuses on a 3-layer ocean model. According to Klinger, "We calculate how the velocity and temperature in each layer change over time, based on the wind blowing on the sea surface, and on heating and cooling on the surface. The atmosphere

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People on the Move

During April 22-23, **Dr. Barry Klinger** traveled to Cambridge, Massachusetts, where he gave a talk at M.I.T. entitled "Why Is There a Low Vapor Transport Limit to Cross-Equatorial Thermohaline Flows?"

Dr. Julian McCreary has covered the circulation of three different oceans this spring. In April, he returned to Korea, where he visited the Korean Meteorological Agency in Kyongju to attend the Austral-Asian Monsoon Panel meeting. He gave a talk entitled "Mechanism of Ocean-Atmosphere Interactions in the Indian Ocean."

In May Dr. McCreary began another round of travels in Florence, Italy, to attend a meeting of the Atlantic CLIVAR (Climate Variability and Prediction Programme) group. Discussion focused on climate variability in the Atlantic Ocean, and he presented a talk on "Subtropical Circulation Cells as a Mechanism for Decadal Climate Variability in the Tropics."

Following the Atlantic meeting, Dr. McCreary continued on to Pushkin, Russia, not far from St. Petersburg, where he was an invited speaker at the International Symposium on Oceanic Fronts and Related Phenomena, dedicated to the late Prof. Konstantin Fedorov. His talk was entitled "The Circulation of Intermediate Water in the Pacific Ocean."

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model is less complete, but the ocean model is a pretty good approximation of the laws that govern the circulation. The atmosphere model is only a crude approximation of the atmosphere. It simulates how the winds change when the SST changes. So a way in which the atmosphere and ocean models interact when they are run together is that changing ocean temperature will cause the winds to change. These changing winds in turn alter the circulation in the ocean, which then further changes the ocean, and so on." At this point in a very strong El Niño period, the more the world knows about the "and so on," the better.

Dr. McCreary completed his journey in Oslo, Norway, where he participated in the Ph.D. thesis defense of **Xiao Bing Shi**, who has been studying at the University of Oslo. He has served as an outside member of her thesis committee. While at the University, Dr. McCreary presented a seminar on the same topic as that given in St. Petersburg.

Dr. Richard Dodge was an invited participant of the coral core group, formed by the Florida Department of Environmental Protection. The group met at the Florida Marine Research Institute in St. Petersburg, Florida, April 28 and 29. The purpose of the meeting was to devise a review of monitoring and assessment techniques and strategies state-wide. An expanded workshop will be held at FMRI in October to continue this work.

Dr. Dodge and M.S. graduate **Dan Anderegg** attended the 1998 Florida Bay Science Conference, May 12-14, at the University of Miami (RSMAS). They presented a poster entitled "Florida Bay Estuary: Using Corals to Detect and Reconstruct Change." **Dr. Peter Swart**, of RSMAS, gave a talk on the contents of their poster.

Once again, **Dr. James Thomas** got his feet wet on Australia's Great Barrier Reef–North Queensland, to be exact (according to his web page). During May 2 - June 1, he taught an intensive "hands-on" course on Ecology of the Great Barrier Reef, designed for sophomore and junior biology and science education majors. Students stayed at the Orpheus Island Research Station. In addition to two weeks spent at the reef, students traveled to other Natural Heritage sites on land, including the Daintree River, Atherton Tablelands, and Duranda, a small town nestled deep in the rainforest north of Cairns, as well as Ingham, another small town in the sugar district north of Townsville. In Dr. Thomas's words, "My goal is to show how students' understanding of reefs is enhanced and inevitably changed by such an undertaking. This is not distance learning, this is getting students involved at a visceral level, taking them halfway around the world to the most spectacular reef on the planet."

Aquaculture M.S. students **David McMahon** and **Richard Hubbard** traveled to Las Vegas February 15-19, to attend Aquaculture '98, which was held at Bally's Resort and Casino. The

David McMahon and Richard Hubbard, loving Las Vegas.

conference was sponsored by World Aquaculture Society, National Shellfisheries Association, and the Fish Culture Section of American Fisheries Society. The students presented a poster entitled "Cannibalism among Tilapia (*Oreochromis aureus*) Fry/Fingerling of Different Sizes." In another project, with the help of Hubbard and local fishermen, McMahon has been collecting Florida pink shrimp (*Penaeus duorarum*) throughout the region for breeding research.

Dr. Debbie Weissman-Berman, Research Scientist at the OC, was the author of an invited paper presented at the U.S.-Pacific Rim Workshop on Composite Materials for Ships and Offshore

David McMahon and pink shrimp, aboard the vessel *Little Tunney*, captained by "Shrimper *Joe" and his buddy, "Brian the Cobia King." (Photos courtesy of David McMahon.)*

(Continued on Page 3)

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Structures, which was held in Honolulu April 7-9. Her paper was entitled "Systems Approach in Sandwich Hull Design." The workshop was sponsored by the Office of Naval Research.

Dr. Weissman-Berman will travel to Stockholm, Sweden, June 8-12. She has been nominated for Scientific Committee of the Fourth International Conference on Sandwich Construction, and she will present an invited paper entitled "Sub-Structure and Yield Design in Sandwich Beams."

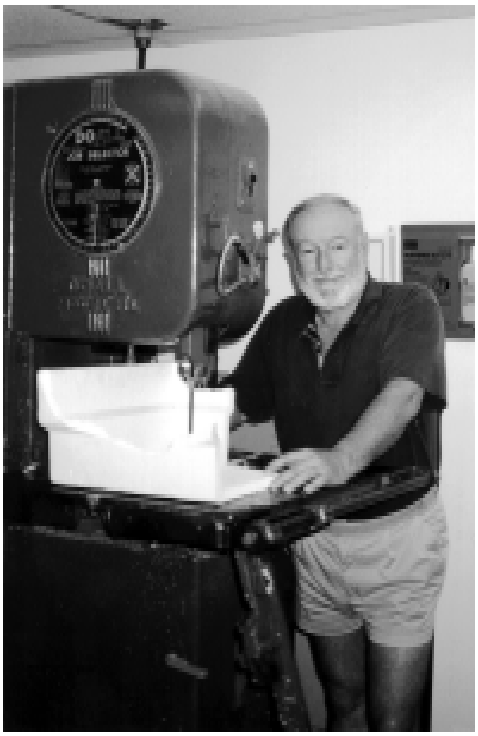
Dr. Charles Messing has been awarded a summer visiting scientist grant to return to the Museum National d'Histoire Naturelle in Paris, during the month of July. He will resume collaborative studies of stalked crinoids with **Dr. Nadia Ameziane**.

Cruise News

GREENHOUSE GASES

Dr. Alexander Soloviev sends us word from "somewhere in the middle of the Atlantic" regarding the research cruise that he is participating in. He is aboard the R/V *Ron Brown*, a NOAA-operated vessel that left Miami on May 7 for parts east.

"We are working on the Gas-Exchange expedition, under the auspices of the NOAA Ocean-Atmosphere Carbon Exchange Study (OCEAS)," Soloviev writes. "It is a collaborative effort of several research organizations, including NSU, NOAA/AOML (Miami), Woods Hole Oceanographic Institution (WHOI), the University of Miami (RSMAS), and others. The exchange of 'greenhouse gases' between ocean and atmosphere, mainly fulfilled by the transfer of gases like carbon dioxide and methane, is one of the major unknowns in the global biogeochemical cycles. An important task of the Gas-Exchange cruise is to quantify the air-sea carbon flux after the spring bloom and to compare direct CO_2 flux measurements to indirect measurements. The group from NSU will study the connection between fine thermohaline structure, turbulence, and gas exchange in the near-surface layer of the ocean." Soloviev will be on the ship until about June 26, when he will fly home from the Azores.



Laszlo Nemeth, in the machine shop.

Besides Soloviev, the NSU group onboard includes **Terry Thompson**, a former Center electronics technician now working as a consultant out of Houston. **Laszlo Nemeth**, Center machinist, will meet up with the ship in Lisbon, Portugal, where he will deliver and install some new equipment and spare parts. According to Nemeth, some of the equipment includes specialized bow-mounted sensors to measure conductivity and water pressure fluctuations; a stern-launched, free-rising profiler that measures temperature, conductivity and pressure; and bow-mounted oxygen sensors. A sonic altimeter is used to measure the height of water from the level of the instrument—about 1.5 meters underwater. Nemeth is looking forward to his land trip (he hates cruises), especially since Lisbon is the site of the World's Fair, and there will be an "open ship" with exhibits on display on May 25, during the height of the Fair.

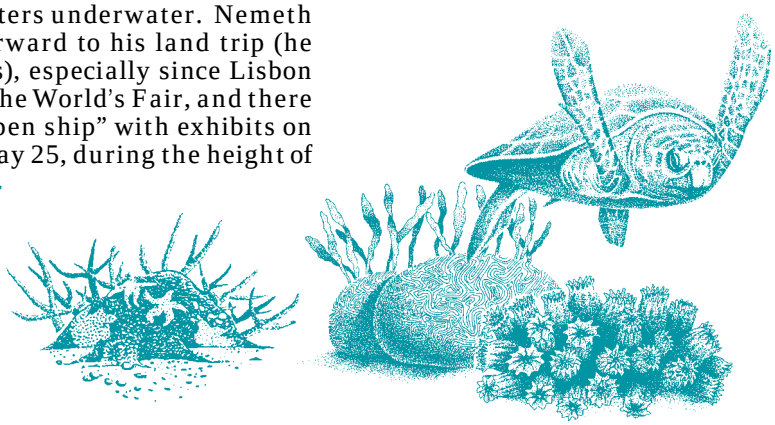
CORALS

During May 18-26, M.S. student **Susan Thornton** participated in a cruise aboard the vessel *Whisker* to monitor coral diseases from Key West to Key Biscayne. Also participating in the cruise were **Dr. Erich Mueller**, Director of the Mote Marine Lab Pigeon Key Research Center, and **Lilian Becker** and **Shay Veihman**, of Florida International University.

At press time, Ms. Thornton contacted us from Delta Shoal, in the Florida Keys National Marine Sanctuary. There she is studying the growth rate of the scleractinian coral *Porites astreoides*. According to Thornton, "There are two color morphotypes of *Porites astreoides*, brown and green, and since they are found in different abundances at different depths, I am studying the photoacclimation and growth rate differences between them. (The green morphs are generally more abundant than the browns at very shallow depths.) Green colonies collected from 4 meters are cored and stained with Alizarin red-S and affixed to an array at 12 meters. Conversely, brown morphs are cored, stained and fixed to an array at 4 meters. This reciprocal transplant allows the cores to experience a new light regime, and their ability to acclimate should be reflected in growth rate, chlorophyll concentration and zooxanthellae density. Growth rate is measured by buoyant weight (measured every 3 to 4 months) and linear extension of the skeleton subsequent to staining."

The investigation is expected to continue until mid-June. Ms. Thornton is grateful for the assistance of **Dr. Joshua Feingold**, her major advisor, as well as **Dr. Richard Dodge** and Dr. Mueller, who are also on her committee. The Mote Marine Lab has provided lab space and field logistical help, primarily aboard the R/V. *Montastrea*.

(Photos on Page 8)



MIASF/NSU Invade Whitbread Village

In the early evening of April 9, about 24 NSU faculty, staff, and students dropped in on the Whitbread around-the-world racing teams at Whitbread Village in Port Everglades. We helped the Marine Industries Association of South Florida (MIASF) fete the tired sailors, who were in port for about 3 weeks for a few heavy boat repairs and a lot of R and R. Fort Lauderdale was one of two U.S. ports of call for the racers (the other was Baltimore). At press time, the sailors were not far from Southampton, from whence they all started last September. Fortunately, the racers have made a habit of dropping in on us every 4 years, and they are given a huge welcome by the local boating community and sailing enthusiasts, not to mention us dreamers. This year was no exception.

MIASF provided some scrumptious food dishes and the mandatory bar for a multitude of guests. The organization also honored the Oceanographic Center by giving us the customary $1,000 check, to go toward graduate scholarships by way of the Bud Huch Scholarship Fund. We are most appreciative, as are the students who receive this financial aid.

NSU's participation was organized by **Jan Witte** and **Melissa Dore**. Ably assisting at Whitbread Village were M.S. students **Heather Balchowsky** and **Brenda Ertan**.

Drs. Richard Dodge, Robert Ballard, and Julian McCreary, at the reception.

Robert Ballard Visits OC

On April 7, famed oceanographer **Dr. Robert Ballard** attended an outdoor reception held in his honor at the Oceanographic Center. He was visiting South Florida to speak at a NSU Forum breakfast in Fort Lauderdale on the following day. Dr. Ballard, popularly known for discovering the wreck of the *Titanic*, has captured the interest of adventurers and other scientists throughout the world. He has participated in more than 100 deep-sea expeditions, including the first manned exploration of the Mid-Ocean Ridge, as well as the discovery of warm-water springs and their unusual animal communities in the Galapagos Rift.

Dr. Ballard was extremely generous with his time and energies at our event, and he managed to talk with everyone present (there were over a hundred of us) who wanted a word with him (or even an autograph). The event was sponsored and organized by NSU's Development Office. It was nicely catered by Restaura, and rousing entertainment was provided by the River Liffey Saloon Jazz Band, to whom we are grateful.

Part of the NSU contingent at Whitbread Village: Dr. Elizabeth McDaniel (V.P. for Academic Affairs), Dr. Richard Dodge, Barbara Dodge, Steven Alford, Sharon Thomas, Terese Kennedy (holding the MIASF check), Dr. James Thomas, Brenda Ertan, Laszlo Nemeth, Suzanne Ferris, Kevin Kohler, Kathy Maxson, Peggy Strumski, Ruth Lazarus, and Dr. Mahmood Shivji. (Photo courtesy of Heather Balchowsky.)

Publications Update

Listed below are just a few of the publications by Oceanographic Center faculty, staff, and students over the past few months. OC authors are in bold type.

David, J., **C.G. Messing**, and M. Roux, 1997: "Modélisation de la Production de Sables Crinoïdiques à partir d'expériences in situ sur le talus bathyal des Bahamas. Conséquences sur l'Interprétation des Calcaires à Entroques Jurassiques." In *Congrès de Sédimentologie, Montpellier*, Publ. ASF Paris, No. 27:71.

Featherstone, C.M., C.G. Messing, and J.B. McClintock, 1998: "Dietary Composition of Two Bathyal Stalked Crinoids: *Neocrinus decorus* and *Endoxocrinus parrae* (Echinodermata: Crinoidea: Isocrinidae)." IN: *Echinoderms: San Francisco*, R. Mooi and M. Telford, Eds., Balkema, Rotterdam, pp. 155-160.

Lu, P., J.P. McCreary, and **B.A. Klinger**, 1998: "Meridional Circulation Cells and the Source Waters of the Pacific Equatorial Undercurrent." *Journal of Physical Oceanography*, 28, pp. 62-84.

McClintock, J.B., B.J. Baker, T.K. Baumiller, and **C.G. Messing,** 1998: "Lack of Chemical Defense in Two Species of Stalked Crinoids: Support for the Predation Hypothesis for Mesozoic Bathymetric Displacement." *Journal of Experimental Marine Biology and Ecology* (in press).

McCreary, J.P., K.E. Kohler, R.R. Hood, and D.B. Olson, 1996: A Four-Component Ecosystem Model of Biological Activity in the Arabian Sea." *Progress in Oceanography*, 37, pp. 117-165.

McCreary, J.P., S. Zhang, and S.R. Shetye, 1997: "Coastal Circulations Driven by River Outflow in a Variable-Density 1-1/2-Layer Model." *Journal of Geophysical Research*, 102, pp. 15,535-15,554.

Messing, C.G., 1997: "Living Comatulids." IN: *Geobiology of Echinoderms*, J. Waters and C. Maples, Eds., Paleontological Society Papers, Vol. 3, Carnegie Mus. Nat. History, Pittsburgh.

Messing, C.G., 1997: "Living Comatulids." In: J. Waters and C. Maples, Editors, *Geobiology of Echinoderms, Paleontological Society Papers*, Volume 3, Carnegie Museum of Natural History, Pittsburgh, PA.

Messing, C.G., 1997: "Biozonation on Deep-Water Carbonate Mounds and Associated Hardgrounds in the Northeastern Straits of Florida." IN *Southeast Section, Geological Society of America Abstracts with Programs*, 29(3), A58. (An INVITED PAPER: Symposium 3, Modern Analogs in Paleontology.)

Messing, C.G., 1998. An initial reassessment of the distribution and diversity of the East Indian shallow-water crinoid fauna." IN: *Echinoderms: San Francisco*,, R. Mooi and M. Telford, Eds., Balkema, Rotterdam, pp. 187-192.

Yu, Z., P.S. Schopf, and **J.P. McCreary**, 1997: "On the Annual Cycle in the Eastern Pacific Ocean." *Journal of Physical Oceanography*, 27, pp. 309-324.

SAIL Conference Held at Oceanographic Center

Center Librarian **Kathy Maxson** hosted a regional marine science librarians conference (SAIL), April 15-17, called Information Systems in the Electronic Age. Along with a number of nearby regional representatives, three members from the Caribbean (University of the West Indies, University of Puerto Rico, and St. Thomas in the U.S. Virgin Islands) were able to attend, thanks to a grant from SAIL's parent group, the International Association of Marine Science Libraries and Information Centers (IAMSLIC).

Some of the topics discussed included the Knowledge Environment Project, electronic journals, a new search engine design, and collaboration across boundaries in the era of high tech. Several talks were given by NSU attendees, including **Donald Riggs**, Vice President for Information Services and NSU librarian, on the emerging digital age; **Carol Yecies**, of NSU's Law School, on copyright law for electronic materials; and **Lia Hemphill** and **Peggy Madison**, from the Einstein Library, on aggregators and catalog access on the web.

Center speakers were **Dr. Charles Messing** on "Deep Reefs and Ancient Gardens," and **Bill Margolis** on the Sea Turtle Monitoring Project, for which he is Project Director. Guest speakers included **Susan Olson** from the South Florida Water Management District, who discussed problems unique to Florida Bay; **Gail Clements**, who demonstrated the Everglades database; and **Jim Lushine**, of the National Weather Service, who gave a presentation on tornadoes and hurricanes in the Southeast.

Outdoor events included a barbecue by the Center's little beach on the Intracoastal Waterway, with a campfire program presented by **Jim Sawgrass**, of the Miskogee Creek Indian Tribe. The group also took a day trip: an airboat ride through the real sawgrass of the Everglades.

Robin La Pierre, a local volunteer who assisted Ms. Maxson, bravely holds a target for Jim Sawgrass, a Miskogee Creek Indian, as he readies his authentic bow and arrow. (Photo courtesy of Kathy Maxson).

Summer Term Schedule

M.S. degree specialties are **Marine Biology, Coastal Zone Management**, and **Marine Environmental Sciences**. Each course carries three credit hours or may be audited. Tuition is $397 per credit hours (50 percent less for audit). Classes meet once a week from 6:30 to 9:30 p.m. at the Oceanographic Center (unless otherwise specified). The summer term runs from July 6 through September 18. Registration ($25 nonrefundable) begins two weeks prior to the start of classes. For further information, call **Melissa Dore** at (954) 920-1909.

Marine Chemistry (OCOR-5605): One of four CORE courses. Reviews the properties and composition of seawater; the importance, distribution, relationships, and cycling of major nutrients; dissolved gasses; trace metals; and organic compounds. A self-paced laboratory is included in course activities. Problem-solving is supplemented by interactive microcomputer work. Prerequisite: undergraduate Introductory Chemistry. Instructor: **Dr. Curtis Burney** (Center faculty). Begins Monday, July 6.

Principles of Coastal Zone Management (CZMT-0609): Describes and discusses the management of coastal resources, based on the principles and techniques of a diverse array of disciplines. Practical solutions to usage conflicts, with special attention to those of the coastal zone, are studied in relation to their impact on the basic resources available. Instructor: **Mr. Stacy Myers** (South Florida Water Management District; adjunct faculty). Begins Tuesday, July 7.

Coral Reef Ecology (OCMB-7012): Covers general ecology of corals and coral reefs. Includes discussions on the distribution, abundance, and physiology of corals, and the interactions among corals and among corals and reef-associated organisms. Effects from important natural and anthropogenic events are considered. Emphasis is given to coral communities and coral reefs of the Caribbean and Florida Keys. A one-day field trip in the Keys (snorkeling only) is required, involving a small surcharge to cover boat rental. Instructor: **Dr. Joshua Feingold** (Center faculty). Begins Wednesday, July 8.

Dry Coastal Ecosystems (CZMT-0610): Focuses on the ecology of coastal (nonwetland) habitats above mean high water, such as dunes, maritime forests, and hammocks. The field aspect is a result of Saturday field trips to South Florida parks, including Loxahatchee National Wildlife Refuge, Jonathan Dickinson Park, and other state parks. Also planned is a three-day trip to the Bahamas (and Lucayan National Park) for Caribbean ecosystems. Instructor: **Dr. Bart Baca** (Center staff). Begins Thursday, July 9.

Taxonomy of Marine Invertebrates (OCMB-6085): Provides systematics and ecology of marine invertebrates with an emphasis on shallow-water species of the tropical western Atlantic. Field work and a major portion of the course will take place during August. A self-paced laboratory is integral to the course. Instructor: **Dr. Charles Messing** (Center faculty). Begins Friday, July 10.

Environmental Sustainability (CZMT-0665): A Distance Education course. Examines in-depth a fast-changing environment in a stressed universe. Emphasis is on the ecological prospectives for change and human survival. Topics include human origins and evolution within rural and highly urbanized systems, stress and behavior, population, needs and wants, minerals, land, forests, water, religion and environment, energy, technology and the corporate sector, and the future. Course may be taken by mail, telephone, fax, e-mail, or in person. Coordinator: **Prof. Keith Ronald** (Center adjunct).

Fall Term Schedule

The fall term extends from September 28 through December 18. Look for course descriptions in the next issue of *Currents*.

Marine Ecosystems (OCOR-5602): A CORE course. Instructor: **Dr. Curtis Burney** (Center faculty). Monday, September 28.

Functional Morphology of Fish (OCMB-6220): Instructor: **Dr. Richard Spieler** (Center faculty). Tuesday, September 29.

Cultural Resource Management (CZMT-0670; MEVS-5030): Instructor: **Dr. Robert Baer** (NSU Business School faculty). Wednesday, September 30.

Coastal and Environmental Policy (MEVS-5004): Instructor: **Mr. Stacy Myers** (Center adjunct). Thursday, October 1.

Aquaculture Systems (OCMB-6205; CZMT-0810; MEVS-5010): Instructor: **Dr. Bart Baca** (Center staff). Friday, October 2.

Environmental Futures (CZMT-0665; MEVS-5001): A Distance Education course. Coordinator: **Prof. Keith Ronald** (Center adjunct). Thursday, October 1.

Marine Mammals (OCMB-6330): A Distance Education course. Coordinator: **Prof. Keith Ronald** (Center adjunct).

Ph.D. Degree Offered

The Oceanographic Center offers the Ph.D. degree in Oceanography. The program requires a minimum of 90 credits beyond the baccalaureate. At least 48 credits must consist of dissertation research, and at least 42 credits must consist of upper-level course work. Required courses include the four M.S. CORE courses. Other upper-level course work usually is in the tutorial mode with the major professor. Tuition will be $2,605 per quarter, beginning with the summer term.

Defenses and Student Papers

Jin-Seok Kim: "A Review and Analysis of Entrepreneurial Wetland Mitigation Banking in Florida," M.S. Capstone Review Paper. Committee: **Mr. Stacy Myers** (Chm.), **Dr. Richard Dodge**, and **Dr. Bart Baca**. January 28.

Mark Ford: "Coral Reef Monitoring and Assessment Needs and Methods," M.S. Capstone Review Paper. Committee: **Drs. Curtis Burney** and **Richard Dodge.** March 20.

Sean O'Brien: "Diel Relationships of Bacterial Growth Rates, Bacteriovore Grazing Rates, and Dissolved Carbohydrates in Subtropical Marine Coastal Waters," M.S. Thesis Defense. Committee: **Drs. Curtis Burney** (Chm.), **Donald McCorquodale** (Center adjunct), and **Uma Narayanan**. March 31.

Kathleen M. Küss: "The Occurrence of PCBs and Chlorinated Pesticide Contaminants in Bottlenose Dolphins (*Tursiops truncatus*) in a Residential Community: Comparison with Age, Gender and Birth Order," M.S. Thesis Defense. Committee: **Drs. Keith Ronald** (Chm.), **Richard Dodge,** and **Curtis Burney,** and **Drs. Randall S. Wells** and **Richard H. Pierce**, of Mote Marine Laboratory. April 6.

Down Goes the Fence!

In mid-May, the fence separating the Oceanographic Center from the South Florida Testing Facility (SFTF), part of the Naval Surface Warfare Center, Carderock Division, came tumbling down. The act wasn't very dramatic in itself, but it did symbolize the demise of a mesh curtain of a sort, and the beginning of a new era of cooperation between the Navy and academia.

The SFTF, located between the OC and the entrance to Port Everglades, has been a continuously operating weapons range for over 40 years. Hundreds of miles of cables, sensors, and high-speed multiplexers are in place, but soon will be supplanted by a large number of additional environmental sensors. When expansion is complete, real-time environmental data covering the atmosphere through the air/ocean interface and down to the sub-bottom will be available to the entire scientific community.

Sponsored by the Office of Naval Research (ONR), the new facility is now called the South Florida Ocean Measurement Center (SFOMC). This joint venture involves NSU's Oceanographic Center, Florida Atlantic University's Department of Ocean Engineering (now located down the road in Dania), the University of Miami (RSMAS), Harbor Branch Oceanographic Institution, Inc., the University of South Florida's Department of Marine Science, and NOAA/AOML (Atlantic Oceanographic and Meteorological Laboratory) in Miami. This program offers all of the participants a unique opportunity to perform truly cooperative research on a very large scale. More about this exciting project in a later issue of *Currents*.

Down goes the fence between the Oceanographic Center and the SFTF. (Photo courtesy of Dr. Richard Dodge.)

Terese Kennedy, in her new office.

A New Face

We have another new face. This one greets outsiders who wander into the Schure Building and assists with purchase orders, supplies, bookkeeping, and general financial and administrative chores for the entire Center. Her name is **Terese Kennedy**, and she came to us a few weeks ago from the Office of Administration at NSU's main campus. She worked there for two years before deciding that she would like to try the boonies for awhile. Our gain, their loss.

*Jan Witte (*Currents *editor) with Dr. Robert Ballard. (Photo courtesy of Jennifer Meriam.)*

And an Old Face

After nearly 28 years at the Oceanographic Center and over 12 years of putting together *Currents* for those interested in our progress over time, your editor is retiring, as of June 30. It has been fun—and short, really. It is hoped that publication of *Currents* will continue uninterrupted. So long!

NOVA SOUTHEASTERN UNIVERSITY

Currents, Spring 1998

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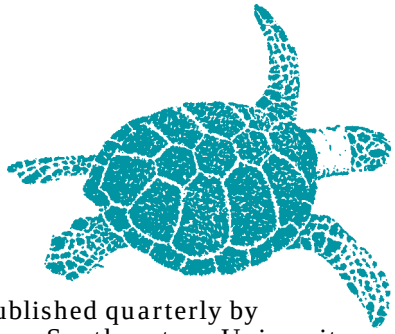
Shallow array housing *Porites astreoides* cores for growth rate study, *Delta Shoal, Marathon, FL (Florida Keys National Marine Sanctuary). (Photo of Susan Thornton taken from slide courtesy of Marj Arai.)*

Susan Thornton samples a bit of the reef in the Keys. (Photo courtesy of Susan Thornton.)



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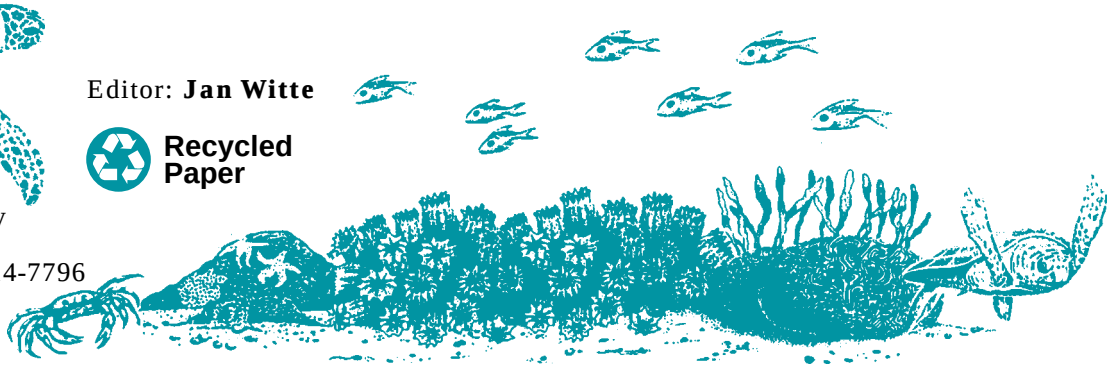

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